

## **A Proposed Model of the Industrial Product Design Process Based on the User Experience Design UXD Process.**

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### **Abstract:**

This paper presents a conceptual model that integrates the principles of User Experience Design (UXD) into the industrial product design process. As the industry faces increasing demands for user-centered and intuitive products, this model aims to improve the overall user experience in product development. The proposed model adapts key stages of the UXD process—research, ideation, prototyping, and testing—within the context of industrial product design, ensuring that the product meets both functional and emotional user needs. This paper outlines a step-by-step process to align industrial design more closely with the principles of user experience, enhancing the final product's usability and satisfaction for end-users. Objective: The primary objective of this paper is to offer a method for industrial designers to create products that not only meet functional and aesthetic requirements but also provide a seamless and satisfying user experience. Methodology: The study employs a deductive reasoning approach to model development, utilizing existing UXD frameworks and adapting them to the industrial product design context. The research includes a comprehensive review of current literature on both industrial design and UXD processes. From these findings, a step-by-step process model was created and tested in hypothetical design scenarios to evaluate its applicability and effectiveness.

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**Industrial Product Design Process, User Experience Design, UXD Process, Product Development, User-Centered Design. Human-Centered Design**

### **References:**

1. Baxter, K., Courage, C., & Caine, K. (2015). \*Understanding your users: A practical guide to user research methods\*. Elsevier.
2. Baxter, M. (1995). Product Design: Practical Methods for the Systematic Development of New Products. CRC Press.
3. Brown, T. (2009). Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation. Harper Business.
4. Buxton, B. (2010). Sketching User Experiences: Getting the Design Right and the Right Design. Morgan Kaufmann.
5. Cross, N. (2000). Engineering Design Methods: Strategies for Product Design. Wiley.
6. Ewa, Formation.(06 / 07 / 2023) UX 101 – Development and Implementation. <https://formationmedia.co.uk/blog/ux-101-development-and-implementation/>
7. Garrett, J. J. (2010). \*The elements of user experience: User-centered design for the web and beyond\* (2nd ed.). New Riders.
8. Garrett, J. J. (2010). The Elements of User Experience: User-Centered Design for the Web and Beyond. New Riders.
9. Hartson, R., & Pyla, P. S. (2012). \*The UX book: Process and guidelines for ensuring a quality user

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experience\*. Elsevier.

10. IDEO (2015). The Field Guide to Human-Centered Design. IDEO.
11. Interaction Design Foundation - IxDF. (2016, June 5). What is Ideation?. Interaction Design Foundation - IxDF. <https://www.interaction-design.org/literature/topics/ideation>
12. Interaction Design Foundation - IxDF. 2016. What is User Experience (UX) Design?. Interaction Design Foundation - IxDF. [[Source](#)]
13. Interaction Design Foundation IxDF. (2016, June 2). What is User Research?. Interaction Design Foundation - IxDF. <https://www.interaction-design.org/literature/topics/user-research>
14. ISO 9241-210:2010 (on human-centered design principles).
15. Ivanova, S. Lee, J. Jane, K. (September 2024). Iterative Design: A cyclical process of design, testing, and refinement. Article· Recherche Gate.
16. Lidman ADA. Explain UX Design (Or Anything) To Anyone; 2020. Available from: [[Source](#)]
17. Lidwell, W., Holden, K., & Butler, J. (2010). Universal Principles of Design. Rockport Publishers.
18. Moggridge, B. (2007). Designing Interactions. MIT Press.
19. Moran, K. (December 1, 2019), Usability Testing 101, Nielsen Norman Group, [[Source](#)]
20. Moustafa, Ahmed. (2023), Integrating User Experience in Practices of Human-Centered Design Process in Product Design, International Design Journal, Vol. 13 No. 5
21. Nielsen, J. (1993). Usability Engineering. Academic Press.
22. Nielsen, J., & Budiu, R. (2013). \*Mobile usability\*. New Riders.
23. Norman, D. A. (2013). \*The design of everyday things\* (Revised and expanded edition). Basic Books.
24. Norman, Don. (2013). *The Design of Everyday Things*. New York: Basic Books.
25. Otto, K., & Wood, K. (2001). Product Design: Techniques in Reverse Engineering and New Product Development. Prentice Hall.
26. Propuls´e F. UX DESIGN PROCESS; 2020. [[Source](#)]:
27. Pugh, S. (1991). Total Design: Integrated Methods for Successful Product Engineering. Addison-Wesley.
28. Roozenburg, N., & Eekels, J. (1995).Product Design: Fundamentals and Methods. Wiley.
29. Rosala, M. (August 22, 2021), Problem Statements in UX Discovery, Nielsen Norman Group [[Source](#)]
30. Tullis, T., & Albert, B. (2013). Measuring the User Experience. Morgan Kaufmann.
31. Ulrich, K.T., & Eppinger, S.D. (2015). Product Design and Development. McGraw-Hill.
32. UXPin, The Guide to Prototyping Process & Fidelity, Ebook.

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